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Conference Abstract

A Machine Learning Tool to Transform Raw Movement Data into Cleaned, Annotated, and Usable Information

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Abstract

The term bio-logging is given to 'the use of miniaturized animal-attached tags for logging and/or relaying data about an animal's movements, behaviour, physiology, and/or environment' (Rutz and Hays 2009). It has been spreading over the scientific world through the last ten years and will become even more popular in the next decade thanks to engineering progresses. Indeed, tags tend to miniaturize, and geolocalization technology, as well as network coverage, is getting improved and cheaper. Today, electronic tags are widely used to study species' movements and migration, resulting in an enormous amount of data (Li et al. 2015, Thums et al. 2018). Currently, platforms like Movebank enable data storage, visualization and management. However, no easy-to-use tool is currently available for conducting a various array of pre-treatment procedures on those data, such as outliers identification, elevation or time management. In that context, we are developing an open source platform based on algorithms and machine learning to automatically return cleaned and annotated data.

Keywords

biologging, electronic tags, localization, migration, behaviour, outliers, tracking

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References

- Li J, Brugere I, Ziebart B, Berger-Wolf T, Crofoot M, Farine D (2015) Social Information Improves Location Prediction.
- Rutz C, Hays G (2009) New frontiers in biologging science. Biology Letters 5 (3): 289-292. https://doi.org/10.1098/rsbl.2009.0089
- Thums M, Fernández-Gracia J, Sequeira AM, Eguíluz V, Duarte C, Meekan M (2018) How Big Data Fast Tracked Human Mobility Research and the Lessons for Animal Movement Ecology. Frontiers in Marine Science 5: 21. https://doi.org/10.3389/fmars.2018.00021